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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/388,829	09/01/1999	KENNETH J. KNIGHT	MS1-321US	4486

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EXAMINER

BURGESS, BARBARA N

ART UNIT	PAPER NUMBER
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2157

DATE MAILED: 07/17/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/388,829	KNIGHT ET AL.	
	Examiner	Art Unit	
	Barbara N Burgess	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2003.
- 2a) ☒ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is in response to the applicant's amendment filed April 30, 2003.

Claims 1-33 are presented for further examination.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 10-12, 14-19, 22, 29, 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saether et al. (hereinafter "Saether", 6,405,219) in view of Strong et al. (hereinafter "Strong", 5,689,688).

As per claims 1, 14-15, 29, 33, Saether discloses a method of synchronization among a plurality of web servers in a network wherein each of the plurality of web servers is coupled to a common data server, the method comprising:

- Retrieving updated data into the staging caches in the plurality of web servers (column 1, lines 50-53; column 2, lines 60-65);
- Copying data from the staging cache of each web server to an active cache of each web server (column 1, lines 63-67, column 2, lines 19-22, column 5, lines 20-25).

Saether does not explicitly disclose:

- Retrieving a scheduled activation time from the data server.

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However, the use and advantages for retrieving data into the staging cache and copying data from the staging cache to an active cache is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Strong (column 2, lines 7-15, column 9, lines 32-34, 51-53).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate retrieving a scheduled activation time from the data server in Saether's synchronization method in order to specify a time in which the plurality of servers will be synchronized.

As per claims 2 and 16-17, Saether does not explicitly disclose:

- Comparing a time associated with a clock in each web server to a time associated with a clock in the data server;
- Adjusting the scheduled activation time on each web server by the time difference between the clock in the web server and the clock in the data server.

However, the use and advantages for comparing the clock in the web servers with that in the data server and adjusting the scheduled activation time is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Strong (column 9, lines 60-67).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate these steps in Saether's method in order for the slave nodes to synchronize its local time with that of the reference time.

As per claims 3 and 18, Saether does not explicitly disclose:

- Each web server contains a clock, and wherein the clocks in the plurality of web servers are not synchronize with one another (column 5, lines 27-31, column 9, lines 11-12).

However, the use and advantages for each web server containing a clock is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Strong (column 3, lines 11-13, column 5, lines 36-39, column 9, lines 10-12).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate each server containing a clock in which the web servers are not synchronized with one another in Saether's method in order to reduce network traffic by a slave node being an eavesdropper and synchronizing itself.

As per claims 4, 19, and 31, Saether discloses copying data from the staging cache to an active cache (column 1, lines 63-67, column 2, lines 19-22, column 5, lines 20-25). Therefore, Saether implicitly discloses copying data comprises swapping an active data cache pointer with a staged data cache pointer.

As per claims 5 and 32, Saether discloses:

- No communications are required between the individual web servers to synchronize their data (Abstract).

As per claims 8 and 21, Saether does not explicitly disclose calculating the next scheduled activation time. However, the use and advantage for scheduling the next activation time is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Strong (column 10, lines 25-67, column 11, lines 1-15).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement calculating the next scheduled activation time in Saether's method of synchronization in order for each web server to be aware of the next scheduled time of synchronization.

As per claims 10 and 11, Saether discloses copying data from active cache of data server to an active cache of the web server when the web server is added and initialized (column 2, lines 59-65).

As per claims 12 and 22, Saether discloses a plurality of servers (web servers) (column 4, lines 35-37). Therefore, Strong implicitly discloses a plurality of web servers comprising a web farm.

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3. Claims 6 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saether et al. (hereinafter "Saether", 6,405,219) in view of Strong et al. (hereinafter "Strong", 5,689,688) and in further view of Hagersten et al. (hereinafter "Hagersten", 5,958,019).

As per claims 6 and 30, Saether, in view of Strong, does not explicitly disclose retrieving updated data into staging caches of web servers performed asynchronously. However, the use and advantage for performing this operation asynchronously is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Hagersten (column 2, lines 47-58, column 3, lines 19-23, column 28, lines 6-14, column 30, line 27).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement asynchronously updating data into the staging cache in Saether's method of synchronization in order alleviate the stalling and degradation of a system.

4. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saether et al. (hereinafter "Saether", 6,405,219) in view of Strong et al. (hereinafter "Strong", 5,689,688) in further view of Yamazaki (hereinafter "Yamazaki", 5,923,855).

As per claims 7 and 20, Saether, in view of Strong, does not explicitly disclose after the scheduled activation time, updating data caches in the data server. However,

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the use and advantage updating data caches in the data server after the scheduled activation time is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Yamazaki (column 1, lines 19-24, column 5, lines 48-57).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement updating data caches in the data server after scheduled activation in Saether's method of synchronization in order to maintain cache consistency.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saether et al. (hereinafter "Saether", 6,405,219) in view of Strong et al. (hereinafter "Strong", 5,689,688) and in further view of Brendel et al. (hereinafter "Brendel", 5,774,660).

As per claim 13, Saether, in view of Strong, does not explicitly disclose the plurality of web servers being load balanced using a domain name service (DNS) round-robin technique. However, the use and advantage for scheduling the next activation time is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Brendel (column 3, lines 1-6).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement a DNS round-robin technique in Saether's method of synchronization in order to manage server congestion and distribute loads across multiple servers.

6. Claims 23- 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saether et al. (hereinafter "Saether", 6,405,219) in view of Strong et al. (hereinafter "Strong", 5,689,688) in further view of Yamazaki (hereinafter "Yamazaki", 5,923,855).

Saether discloses a method of synchronization among a plurality of web servers in a network wherein each of the plurality of web servers is coupled to a common data server, the method comprising:

- Retrieving updated data into the staging caches in the plurality of web servers (column 1, lines 50-53; column 2, lines 60-65);
- Copying data from the staging cache of each web server to an active cache of each web server (column 1, lines 63-67, column 2, lines 19-22, column 5, lines 20-25).

Saether does not explicitly disclose:

- Retrieving a scheduled activation time from the data server;
- Calculating the next activation time.

However, the use and advantages for retrieving a scheduled activation time and calculating the next activation time is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Strong (column 2, lines 7-15, column 9, lines 32-34, 51-53, column 10, lines 25-67, column 11, lines 1-15).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate retrieving a scheduled activation time from the data

server in Saether's synchronization method in order to specify a time in which the plurality of servers will be synchronized.

Saether, in view of Strong, does not explicitly disclose after the scheduled activation time, updating data caches in the data server. However, the use and advantage updating data caches in the data server after the scheduled activation time is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Yamazaki (column 1, lines 19-24, column 5, lines 48-57).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement updating data caches in the data server after scheduled activation in Saether's method of synchronization in order to maintain cache consistency.

Response to Arguments

The Office notes the following arguments:

- (a) Saether does not disclose or suggest "prior to the scheduled activation time, retrieving updated data into staging caches in the plurality of web servers".
- (b) Strong fails to disclose or suggest "retrieving a scheduled activation time from the data server, retrieving updated data into the staging caches in the plurality of web servers, at the scheduled activation time, copying data from the staging cache of each web server to an active cache of each web server."

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(c) Hagerstem fails to disclose or suggest a scheduled activation time, a staging cache, or an active cache.

(d) Yamazaki fails to disclose or suggest a scheduled activation time, a staging cache, or an active cache.

(e) Sakon fails to disclose or suggest a scheduled activation time, a staging cache, or an active cache.

(f) Brendel fails to disclose or suggest a scheduled activation time, a staging cache, or an active cache.

In response to:

(a)-(b) Saether discloses the updated data located in a repository (staging cache) in the global server being copied to a directory (active cache) on the content server (column 1, lines 62-67, column 2, lines 19-22, 60-65, column 5, lines 13-25).

Saether does not explicitly disclose the scheduled activation time in which the updating of the caches take place, however, Strong shows how data can be updated and synchronized according to an activation time (column 5, lines 28-32, column 7, lines 8-10, column 8, lines 43-45). Therefore, Saether in view of Strong discloses this feature.

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(c) Hagersten shows several examples of staging caches and active caches. The reference discloses updating data from main memory to an internal cache (column 1, lines 33-50, column 5, lines 30-35, column 7, lines 21-36). This reference also discloses transfer of data from a source to a destination within memory (column 6, lines 30-40). These caches are referenced as L2 and L1 caches (column 6, lines 52-65).

(d) Yamazaki discloses a cache memory (active cache) and a memory module (staging cache). The reference discloses the cache memory having a copy of the memory module and that copy coinciding with the content of the memory module.

(e) Applicant's arguments with respect to claims 8, 21, 23-28 have been considered but are moot in view of the new ground(s) of rejection.

(f) Brendel discloses the limitation of a web farm and load balancing which is not explicitly disclosed in Saether in view of Strong. Saether in view of Strong discloses the active and staging caches. Brendel is used to show that web farms and load balancing are well known in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara N Burgess whose telephone number is (703) 305-3366. The examiner can normally be reached on M-F (8:00am-4:00pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Ettinene can be reached on (703) 308-7562. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7240 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Barbara N Burgess
Examiner
Art Unit 2157

July 14, 2003

A handwritten signature in black ink, appearing to read 'Dung C. Dinh', with a long, sweeping horizontal stroke extending to the right.

Dung C. Dinh
Primary Examiner